Aim : The aim of the study is to evaluate and compare the presence and distribution of α- smooth muscle actin positive stromal myofibroblasts in Normal oral mucosa, Potentially Malignant Lesions, Verrucous carcinoma and different histological grades of Oral Squamous cell carcinoma.

Materials and Methods : The study involved 50 formalin fixed paraffin embedded tissue samples : 15 cases of normal oral mucosa, 5 cases of OL, OSMF and OLP, 5 cases of VC, 5 cases of WDSCC,MDSCC and PDSCC each. Expression of myofibroblasts using Alpha SMA was analyzed immunohistochemically and the data analysis was accomplished using SPSS version 22.0. Chi square test was applied to evaluate statistical significance. Intergroup and pair wise comparison group among the groups was done by Kruskall-Wallis and Mann Whitney test with p value of ≤ 0.05 which was considered as statistically significant.

Results : There was no expression in any of the tissues of the normal oral mucosa samples which was taken as external negative control. Oral malignant lesions showed presence of increased number of myofibroblasts with high staining index when compared to oral potentially malignant lesions. Spindle and Network pattern of distribution was seen in malignant cases whereas potentially malignant cases showed Focal pattern.

Conclusion : The abundance of myofibroblasts in the stroma of OSCC may be used as a stromal marker of aggressive behavior correlating with poor prognosis. It might help us in identifying a subset of patients who require more aggressive methods of therapy in order to improve their survival rate, and it might also help in early intervention and patient counseling for prompt follow-up. Thus aiding to curb the carcinogenesis process and provide an improved quality of life to the patients.

Keywords: Potentially malignant, malignant lesions, Myofibroblast, Immunohistochemistry, Alpha SMA.